

Japanese plan to clean up

Tokyo

TORN by disagreement between the powerful Ministry of International Trade and Industry (MITI) and the much smaller Environment Agency, the Japanese government on Tuesday adopted an "action programme to arrest global warming" that contains two different targets for limiting Japan's carbon-dioxide emissions by the year 2000.

MITI favours holding per capita carbon dioxide emissions to "about" this year's level by the year 2000. Because population will increase over the decade, this actually allows total carbon dioxide emissions to rise by about 5 per cent. The Environment Agency is backing the more optimistic goal of holding total emissions to the 1990 level and so requires a reduction in per capita emission levels. Whichever target is finally adopted, fairly drastic action will be required.

Saburo Kato, director of the Environment Agency's global environment division, says that he is "very happy and very proud" of the action programme's ambitious targets. In addition to reaching a compromise with MITI, success required the coordination and support of many other ministries and agencies including the Ministries of Transport and Construction, the Science and Technology Agency, the Ministry of Foreign Affairs, the Ministry of Agriculture, Forestry and Fisheries and the Forestry Agency. Kato stresses that the programme represents the consensus of all of these organizations and thus is "very deep and profound".

Apart from placing limits on carbon dioxide, the programme calls for methane levels to be held to their current level and for nitrous oxides and other greenhouse gases to be held to current levels "as far as possible". The plan covers the period from 1991 to 2010 and will be reviewed "flexibly" in response to international trends and scientific findings.

To meet the limits on carbon dioxide emissions various measures will be adopted. Areas of trees and greenery will be expanded in urban areas. Use of insulation, solar heating, waste heat (from sewage, subways and waste incineration) and co-generation of electric power will be encouraged to conserve energy.

Transportation systems will be renovated to encourage greater use of mass transit and to eliminate the problems of traffic jams in major cities like Tokyo. The development of fuel-efficient cars, electric cars and other energy-efficient transport systems will be promoted.

Energy conservation will be further encouraged in the manufacturing, agriculture, forestry, fishery and construction industries, even though this is an area in which Kato feels Japan "already leads the

world". And carbon dioxide emissions in the power-generation sector will be held down by developing nuclear power, increasing the use of liquid natural gas, and by introducing dispersed small-scale power sources such as fuel cells and photo-electric cells.

Finally, the general public in Japan will be encouraged to reduce carbon dioxide emissions by recycling products, by eliminating excessive use of packaging, vending machines, and direct mail, by reducing working hours and by encouraging everyone to take a summer holiday.

No laws have yet been introduced to implement the programme, but Kato says that emission levels will be monitored annually by all the various ministries and agencies under the coordination of his department to ensure that the targets are achieved. Tax incentives "may" be introduced, he says, to ensure adoption of some measures. But he is confident that the programme will attain its goals.

He points to the case of pollution control in Japan where industry initially opposed restrictions but eventually developed sophisticated pollution-control technology now being sold worldwide. Kato claims that all the ministries and agencies believe that the targets can be achieved "without any significant economic impact", even though MITI objected to the more ambitious target on the grounds that it would hurt the economy.

Whichever target Japan eventually attains, it should end up with one of the

RESEARCH QUALITY

David, meet Goliath

Washington

THE 220 researchers sponsored by the Howard Hughes Medical Institute (HHMI) are about as productive as the 3,000 scientists who work for the US National Institutes of Health (NIH), at least when it comes to "hot papers", according to the Philadelphia-based Institute for Scientific Information (ISI). In a study to be published in *Science Watch* later this month, ISI found that of the 894 most cited biology papers since 1987, HHMI investigators accounted for 82. Within NIH, on the other hand, more than ten times as many researchers managed to score a total of only 84 of those papers. In their defence, officials at the NIH say that their scientists have important clinical duties that HHMI investigators can safely ignore. Government scientists are also forced to endure government salaries and budgets. But the startling ISI statistics show that the HHMI has made good its intention to find and fund the best US scientists, even if it means shaming the NIH in the process.

Christopher Anderson

lowest levels of carbon dioxide emission in the developed world on a per capita basis. According to figures for 1988, from the Organization for Economic Co-operation and Development, only Italy and France have lower per capita emissions (2.01 and 2.04 tonnes of carbon per person per year, respectively) than Japan (2.45 tonnes per year). Japan's emission levels are already considerably less than the United Kingdom (2.97 tonnes per year), West Germany (3.45 tonnes) and the United States (6.14 tonnes).

It is hard though to see how many of the measures advocated in the current action programme will be implemented. Greening of cities and improvement of road transportation can be achieved only if land is available for parks and roads. That would require sky-high land prices to be brought down, something which the government has already shown itself incapable of doing. Measures being considered to reduce land prices, such as increasing taxes on farmland in urban areas, would actually decrease the already limited green areas. Furthermore, the Japanese stock market is propped up by the inflated value of land assets of companies and any drastic downward revision of land prices could cause economic chaos.

Similarly, the electric power industry will fight tooth and nail to prevent introduction of dispersed sources of power such as solar power and fuel cells that would reduce its monopoly. And even persuading the Japanese to take summer holidays will prove difficult because of the enormous social pressure to stay at work.

David Swinbanks

AIDS RESEARCH

NIH digging in

Washington

THOSE still optimistic that the war against AIDS will soon be over need only look to the US National Institutes of Health (NIH) for a reminder of the long haul ahead. On the assumption that no end is in sight, NIH this month announced that they were transferring more than \$2 million of their AIDS research funds into training grants to encourage about 60 new scientists to join the field. "The magnitude of AIDS and HIV infection will continue to grow for the remainder of the century", said Health and Human Services secretary Louis Sullivan in a statement. "These grants will help to expand the number of talented investigators . . . who can perform the research that will help to conquer this devastating disease." The funding, which will be distributed to postdoctoral fellows in 14 US universities and research institutes, is the first such effort to ensure that there will be a continuing supply of researchers in the years to come, says NIH programme director Gregory Milman.

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